

## REMARKS

Before entry of this Amendment, claims 1- 28 were pending in the application. Claims 14 and 26 were previously withdrawn. After entry of this Amendment claims 1- 13, 15-25, 27 and 28 remain pending under examination. The number of total claims has not been increased, and the number of independent claims has not been increased beyond the number for which payment previously had been made.

Applicant has carefully considered the Examiner's Action of November 30, 2005, and the references cited therein. The following is a brief summary of the Action. Claim 28 was allowed. Claims 15, 23 and 27 were objected to as being dependent upon a rejected base claim, but were deemed to be allowable if rewritten in independent form. Claims 1, 2, 5, 7-9, 11-13, 17, 18, 20, 21 and 24 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bonnell (US Patent No. 4,863,133) in view of Wilcox (US Patent No. 6,697,710). Claims 3 and 4 were rejected under 35 U.S.C.(a) as unpatentable over Bonnell in view of Carlson et al. (U.S. 2002/0195535). Claims 6, 10, 16, 17, 19, 22 and 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bonnell in view of Wilcox as applied to claims 1, 2, 5, 9 and 12, and further in view of Kelly et al (US Patent No. 6,449,851).

For the reasons explained below Applicant respectfully traverses the rejection of claims 1, 2, 5, 7-9, 11-13, 17, 18, 20, 21 and 24 under 35 U.S.C. 103(a) over Bonnell in view of Wilcox.

Claim 1 is drawn to a support arm for use in a respiratory circuit. Bonnell is entitled "Arm Device for Adjustable Positioning of a Medical Instrument or the Like." In contrast to Bonnell, Wilcox is entitled "Gas Pipe Explorer Robot." Concerning claims 1

and 1.1, the Office Action states beginning with the last five lines on page 2 and continuing through the first five lines on page 3:

Wilcox discloses an apparatus that does provide at least one inflatable bladder operably disposed at a point of connection between at least two of the arm segments, wherein upon inflation of the bladder the arm segments are locked into position with respect to one another and upon deflation the arm segments are released and positionable with respect to one another (see column 2 lines 50-65). Therefore it would have been obvious to modify Bonnell invention by providing at least one inflatable bladder operably disposed at a point of connection between at least two of the arm segments, wherein upon inflation of the bladder the arm segments are locked into position with respect to one another and upon deflation the arm segments are released and positionable with respect to one another as taught by Wilcox in order to prevent movement and to provide better positioning.

As explained below, this statement of the Office Action incorrectly characterizes the functioning of the elements of Wilcox's robotic device, and particularly that of the arms and the bladders.

The Wilcox device is a motorized vehicle in the form of an articulated snake-like robotic vehicle 100 formed of three connected sections 105, 110 and 115 shown in Wilcox Fig. 1. Each section has motors that propel some of the wheels connected to each section. The robotic vehicle 100 is intended to be inserted into pipes that form gas distribution pipelines. Per Wilcox column 2, lines 4-7, these pipelines consist of main pipes as large as 48 inches in diameter and tributary pipes of the main pipes wherein the diameters of the tributaries are four inches or six inches. First and second telescoping tubes 130, 131 shown in Wilcox Fig. 1 are connected between adjacent sections 110 and 115 of the robotic vehicle 100. These tubes 130, 131 can be

telescoped and retracted to cause the two elements connected thereby to move farther apart or closer together, respectively.

The at least one inflatable bladder 140 that is discussed at Wilcox column 2, lines 50-65 is not operably disposed at a point of connection between two of the Wilcox sections 110 and 115 for example. Instead, these bladders extend from the sides of the sections 110 or from the sides of the telescoping tubes 130, 131 that connect the sections. The bladders that extend from the sides of the section 110 are inflated to exert force against side walls of the pipe in which the robot is disposed, so that when the bladders are alternately inflated and deflated, the tube segments (and hence the robot) may be moved from side to side and up and down within the pipe. The bladders that are affixed to the sides of each of the telescoping tube segments 130, 131 are used to move the robot axially within the pipe. When these bladders are alternately inflated and deflated, one of the tube segments 130, 131 can be held fixed with respect to the pipe so that extending or retracting the telescoping tube in that segment will result in an inchworm-like movement of the robotic device axially within the pipe.

This functioning of the Wilcox bladders is made plain in the following passage from Wilcox column 2, lines 53-63 (emphasis added):

The device may also include **inflatable bladders 140** which can be inflated to **exert force against side walls of the pipe**. Each bladder may be affixed to each of the telescoping tube segments. The bladders can be alternately inflated and deflated, and the telescoping may be extended or retracted. This operation can allow the device to move using an inchworm-like operation. **Multiple bladders, on each side of the telescoping segments**, can allow positioning of the device within any desired location on the pipe cross-section. In addition, the tube axis may be angled with respect to the pipe axis. This may be important in mobility control.

Thus, the Wilcox bladders extend from the sides of the sections 110 or the tube segments 130, 131 and are used to position the robot transversely and elevationally within the gas pipeline. Not only is there no suggestion in Wilcox that inflation and deflation of the bladder 140 tends to lock any arm segments into position with respect to one another, but the contrary is disclosed. For when one tube's bladder is positioned against the sidewalls of the pipeline so as to hold that tube in fixed position relative to the pipeline, then the telescoping tube 130, 131 is retracted or extended, and thus "[t]his operation can allow the device to move using an inchworm-like operation." Thus, the Wilcox bladders do not lock and unlock the tubes 130, 131 to each other, and the Wilcox bladders do not lock and unlock one telescoping segment of one tube 130 to the other telescoping segment of that tube 130. And thus the Wilcox bladders 140 do not function as required by applicant's claims. Accordingly, Wilcox fails to contain any suggestion to the person of ordinary skill to dispose at least one inflatable bladder at a point of connection between two of the arm segments of a support arm for use in a respiratory circuit wherein inflation of the bladder locks the arm segments into position with respect to one another and deflation of the bladder releases the arm segments to render them positionable with respect to one another.

Furthermore, it is highly unlikely that the person of ordinary skill in the construction of support arms for respiratory circuits would look to the art of Wilcox, which is the art of constructing a self-propelled robotic vehicle to be disposed within gas distribution pipelines to carry sensors to detect leaks in such pipes as well as wall thinning of such pipes, corrosion of such pipes, and other pipe difficulties. Accordingly, the Office Action ignores the fact that the person of ordinary skill must be of the art of

the claimed invention rather than of a totally disparate and unrelated art such as the case with Wilcox. The Office Action's implied contention that the art of constructing self-propelled motorized robots that operate within the confines of gas pipelines for the purpose of carrying sensors to detect flaws in the pipe, pertains to the claimed invention, is clearly erroneous.

Applicant therefore respectfully submits that claims 1, 2, 5, 7-9, 11-13, 17, 18, 20, 21 and 24, as presented herein, are patentable under 35 U.S.C. § 103(a) over Bonnell in view of Wilcox.

For the reasons explained below, Applicant respectfully traverses the rejection of claims 3 and 4 under 35 U.S.C. § 103(a) over Bonnell in view of Carlson et al.

Lines 14-18 on page 5 of the Office Action contend:

Carlson discloses an apparatus that does provide a bladder that is a tube that extends through all of the arm segments. Therefore it would have been obvious to modify Bonnell's invention as claimed by providing a bladder that is a tube that extends through all of the arm segments as taught by Carlson in order to prevent movement and to provide better positioning.

However, Carlson essentially discloses an annular shaped bladder 60 that is disposed in a first annular-shaped chamber 28 that is defined in the space between an external tube 32 that surrounds an internal tube 34. Tubes 32, 34 are incapable of moving with respect to one another. As explained at lines 1-3 of Carlson paragraph 0029, the two tubes 32, 34 are fixed together by a connecting and sealing means 48 and not by the bladder 60. Thus, the Carlson bladder 60 does not function in any manner such that upon inflation of said bladder 60 said arm segments 32, 34 are locked into position with respect to one another. Thus, Carlson fails to disclose a bladder that extends through

all of the arm segments in order to prevent movement and to provide better positioning and therefore fails to rectify the bladder deficiencies of Bonnell.

Applicant therefore respectfully submits that claims 3 and 4 are patentable under 35 U.S.C. § 103(a) over Bonnell in view of Wilcox.

For the reasons explained below, Applicant respectfully traverses the rejection of claims 6, 10, 16, 17, 19, 22 and 25 under 35 U.S.C. 103(a) over Bonnell in view of Wilcox and further in view of Kelly et al.

Kelly et al fails to disclose any bladder and thus fails to correct the deficiencies noted above in the asserted combination of Bonnell in view of Wilcox.

Kelly et al discloses a mirror 11 attached to one end of a gooseneck 8 that has its other end attached to a support shaft 6 that is magnetically and removably attached to the frame of a trailer by a magnet 5 for facilitating alignment of the trailer's hitch ball to a towing vehicle as the vehicle is backed toward the trailer. Thus, the Kelly et al disclosure is completely divorced from the art of Bonnell, which does not include a mirror. Nonetheless, lines 2-4 on page 6 of the Office Action state:

Therefor it would have been obvious to modify Bonnell's invention by providing at least one of the arm segments that has a flexible section as taught by Kelly in order to provide better positioning.

However, Kelly et al never suggests that its gooseneck 8 is superior to the types of joints used in Bonnell. Only applicant's specification provides the guidance to the person of ordinary skill to employ a flexible section in at least one of the arm segments of a support arm for use in a respiratory circuit.

Claim 6 requires at least one inflatable bladder located in the flexible section of the arm segment and requires the bladder to be inflatable to rigidify the flexible section.

There is no suggestion in the asserted combination of Bonnell, Wilcox, and Kelly et al to provide an inflatable bladder within Kelly et al's flexible section. Thus, claim 6 is patentable under 35 U.S.C. § 103(a) over Bonnell in view of Wilcox and further in view of Kelly et al for this additional reason.

Applicant's claim 10 describes a bladder that is configured to be inflatable and deflatable by a user employing only one hand. Such a structure is self-evidently superior to a structure that requires two hands or a separate control unit. Such a self-evident advantage of applicant's invention need not be touted in applicant's specification, as applicant's claimed structure provides this advantage. However, lines 8-10, on page 3 of applicant's specification state:

Objects and advantages of the invention will be set forth in part in the following description, or may be obvious from the description, or may be learned through practice of the invention.

Additionally, page 3, lines 21 through page 4, line 2 of applicant's specification states:

Also provided in the present invention is a support arm as previously discussed where at least one of the arm segments may have a flexible section. Also, at least one of the inflatable bladders is located in the flexible section of the arm segment. The bladder is inflatable to rigidify the flexible section.

Moreover, in support of the rejection of claim 10, lines 12-16 on page 6 of the Office Action state:

The applicant's specification has not established any criticality on why the arm segments are adjustable and the bladder is inflatable and deflatable by a user employing only one hand and therefore the examiner believes that it is a matter of design choice and the invention can be adjusted and the bladder be inflated or deflated by one or two hands or even by a control circuit.

This contention of the Office Action is similar to contentions made with respect to claims 8, 13, 17 and 18. Applicant respectfully submits that each of these contentions is tantamount to a denial of the requirement to give full effect to every limitation in applicant's claims. Moreover, this contention of the Office Action highlights the deficiency of the asserted combination of Bonnell, Wilcox, and Kelly et al to render claims 8, 10, 13, 17 and 18 unpatentable. Accordingly, claims 8, 10, 13, 17 and 18, as presented herein, are patentable under 35 U.S.C. § 103(a) over Bonnell in view of Wilcox and further in view of Kelly et al for this additional reason.

The asserted combination of Bonnell in view of Wilcox and Kelly et al lacks the necessary suggestion to combine elements from disparate technologies that are completely unrelated to one another and amounts to little more than a selective extraction of structures from patent documents that are cobbled together under the guidance of applicant's specification in order to mimic the unique and non-obvious combination of elements presented in applicant's claims.

Applicant therefore respectfully submits that claims 6, 10, 16-19, 22 and 25, as presented herein, are patentable under 35 U.S.C. § 103(a) over Bonnell in view of Wilcox and further in view of Kelly et al.

Applicant respectfully requests reconsideration and reexamination of claims 1-13, 15-25, 27 and 28, as presented herein, and submits that these claims are in condition for allowance and should be passed to issue.

If any fee or extension of time is required to obtain entry of this Amendment, the undersigned hereby petitions the Commissioner to grant any necessary time extension

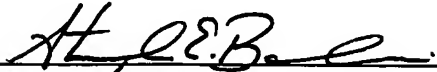


and authorizes charging Deposit Account No. 04-1403 for any such fee not submitted herewith.

Respectfully submitted,

DORITY & MANNING, P.A.

DATE: 3/23/06

BY:   
STEPHEN E. BONDURA  
Reg. No. 35,070  
P.O. Box 1449  
Greenville, SC 29602-1449  
(864) 271-1592